

What is claimed is:

1. An injectable polymeric composition comprising a non-aqueous liquid that forms a non-absorbable hydrogel upon contact with an aqueous environment.
2. An injectable polymeric composition as set forth in claim 1 wherein the non-aqueous liquid comprises a segmented/block copolymer comprising ether and peptide chain sequences.
3. An injectable polymeric composition as set forth in claim 2 made by a process comprising the step of end-grafting an amine-terminated polyether with ϵ -caprolactam.
4. An injectable polymeric composition as set forth in claim 1 comprising a liquid succinic anhydride-bearing polyether and liquid diamine capable of an *in situ* reaction to form an amide-crosslinked network.
5. An injectable polymeric composition as set forth in claim 4 wherein the succinic anhydride-bearing polyether is made by a process comprising the step of a free-radical reaction of a polyether with maleic anhydride.
6. An injectable polymeric composition as set forth in claim 1 made by a process comprising the step of mixing a solution of succinic anhydride-bearing polyvinylpyrrolidone in liquid succinic anhydride-bearing polyalkylene glycol with a reactive liquid diamine or polyoxyalkylene diamine capable of forming an amide-crosslinked network.

7. An injectable polymeric composition as set forth in claim 1 comprising a liquid urethane-interlinked polyether glycol capped with isocyanate end-groups.
8. An injectable polymeric composition as set forth in claim 1 comprising a liquid polyether glycol capped with itaconic half-ester end-groups and a redox free-radical initiator system comprising a combination of ascorbic acid and potassium persulfate.
9. An injectable polymeric composition as set forth in claim 1 comprising a dispersion of surface-maleated polypropylene microfibers and amine-terminated polyethylene glycol capable of forming a fiber-reinforced network in an aqueous environment, wherein the fibers are covalently linked to the polyethylene glycol-based matrix.
11. An injectable polymeric composition as set forth in claim 1 as a precursor for a hydrogel for augmenting the intervertebral disc nucleus pulposus.
12. An injectable polymeric composition as set forth in claim 1 as a precursor for a prosthetic intervertebral disc nucleus pulposus.
13. An injectable polymeric composition as set forth in claim 1 as a precursor for a hydrogel for the treatment of herniated disc.
14. An injectable polymeric composition as set forth in claim 1 further comprising a cell-growth promoting agent selected from those known to accelerate tissue regeneration and site stabilization of a synthetic hydrogel prosthesis.

15. An injectable polymeric composition as set forth in claim 1 prepared under aseptic conditions or terminally sterilized.